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Open Innovation Among SMEs in Malaysia: The Issue of Trust

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Abstract

The advancement of technology such as crowdsourcing, social media, and web applications has created a paradigm shift for innovation to move towards a more open platform such as open innovation. This paper examines the issues and challenges facing the implementation of open innovation among the small and medium-sized enterprises (SMEs) in Malaysia. It describes the importance of embracing this new paradigm in lined with the government targets to put forward productivity and innovation as the important pillar to drive the country's economic growth. There has been a substansial body of evidence to relate trust as an important component to business trends. Although, there has been an exponentially rich study on trust across broad field and sciences, trust in the light of open innovation is still scarce.This paper aims to provide additional rationale and foundational support for the advancement of knowledge pertaining to trust and its relation to the open innovation via several dimensions namely the trust characteristics, innovation performance, organizational context, knowledge sharing and information technology (IT).

INTRODUCTION

The increasing globalization of business activities, the revolution of research and development (R&D) and the fast-moving technological changes have intensified the competition among business players across and within countries stipulating for continuous technological knowledge enrichment. In today's business world, it is almost impossible for businesses to craft competitive edges by pulling all in-house resources and capabilities (Abulrub & Lee, 2012). As innovation becomes a major strategic ingredient to a country economic stability and balance social welfare (Ghili, Shams & Tavana, 2011; Rahman & Ramos, 2014), companies' innovation activities demanded critical uplifting which requires a new dimension of strategy widely known as "open innovation".

OVERVIEW OF THE STUDY

Open innovation is a paradigm that explains a new dimension of innovation. Closed innovation on the contrary, has always been the way most industries have been operating and as some may refer open innovation as the 21st Century phenomenon, it is therefore necessary to begin by looking at the historical development of innovation, in order to understand the novelty of the of open innovation concept and the challenges it yields.

Introduced by Henry Chesbrough in 2003, open innovation, is referred as "the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively". Further in 2006, Chesbrough provide a more detailed version of what open innovation is about. He points that open innovation is '…a paradigm that assumes firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology. Open innovation combines internal and external ideas into architectures and systems whose requirements are defined by a business model'.

In the light of business practitioners, open innovation has been implemented in hundreds of companies incorporating into their respective business models and innovation processes. Among the big names with strong open innovation efforts are GE, LEGO, General Mills, Philips, P&G, Unilever, Shell, Nokia and the list are expanding. Discussions with regards to open innovation have gained enormous attention from both the academic researchers and industrial experts. Although open innovation has been an important subject in the innovation management research, its theoretical framework has been relatively under researched (Ahn, Minshall & Mortara, 2013). Evidence from previous researches in open innovation, focused on understanding what are the drivers for business organization to shift their innovation directions towards an open innovation platform (Bigliardi, Dormio & Galati, 2012; Burcharth, Knudsen & Søndergaard, 2014; Chesbrough & Crowther, 2006; Chiaroni, Chiesa & Frattini, 2011; Gassmann, Enkel & Chesbrough, 2010; Huizingh, 2011; Petroni, Venturini & Verbano, 2012; Savitskaya & Ihrig, 2012; van de Vrande, de Jong, Vanhaverbeke & de Rochemont, 2009; Verbano & Venturini, 2013; West, Vanhaverbeke & Chesbrough, 2006).

Despite the wide adoption of open innovation across the globe, the notion of what open innovation means, the scope and the uniqueness of the term is still greatly debated (Dahlander & Gann, 2010) and has mainly been analyzed in large, high-tech multinational enterprises (MNEs) (Hossain, 2013; Kirschbaum, 2005; van de Vrande et al., 2009). Evidence revealed that the growing interest of open innovation in smaller organizations such as small and medium-sized enterprises (SMEs) (Gassmann, Enkel & Chesbrough, 2010; Henkel, 2006; Lee, Park, Yoon & Park, 2010; Parida, Westerberg & Frishammar, 2012; Rahman & Ramos, 2013), is mainly focus on very specific industries or on specific issues (Chesbrough, 2002; Laursen & Salter, 2006) rather than the full open innovation model.

THE CASE OF MALAYSIA

As for Malaysia, companies are urged to adopt open innovation model as it can lead to the creation of more investment opportunities and will become an important tool to stimulate the economic growth among SMEs in Malaysia. The government of Malaysia targets an increase of 4% of the annual growth against the existing of 2.3% on the back of good support from the SMEs in order to achieve the high-income developed nation status (The Star, 2015). Diego Comin (2014), highlighted on the declining signs of Malaysia investment rate and productivity growth roughly by 50% relative to the 1990s and pointed that the missing factor that contributes to this is due to the lack of technological knowledge (Comin Diego, 2014).

The Eleventh Malaysia Plan (2015), addresses the productivity and innovation as the most important pillars to drive the economy towards the desired stage. In doing so, the Malaysian government is determined in apportioning supporting resources to assist in the development of Malaysian SMEs. In order to unlock the innovation potentials and boost the domestic, regional, and global competitive advantage among Malaysian SMEs, the Malaysian government, in its Eleventh Malaysian Plan, embark a 'game-changing' strategies to stimulate the economic growth by strengthening the innovation activities, developing competitive cities and building regional economic corridors to create vibrant hubs for investment platforms and providing an ecosystem that supports the creation of new talent and knowledge. Through the same plan, the economic growth will be underpinned by a strong policies; high-skilled talent in line with a stronger investment and productivity (EPU, 2015).

In another agenda, Malaysian Innovation Agency (AIM) established The National Innovation Strategy, to serve as the foundation for future growth in ensuring Malaysia to remain competitive and relevant in the changing

economic environment. Three main thrusts have been underlined to help innovate Malaysia, which are strengthening the building blocks of innovation; switching on the innovation enablers; and shooting the stars. In order to 'switch the innovation enablers', a few mechanisms have been underlined and among others are through the adoption of open innovation via the Helix Model. Through this mechanism a solid and structured framework needs to be established to provide a reliable and flexible support to adapt to the rapidly changing market forces and overcome unforeseeable obstacles.

The Eleventh Malaysian Plan (EPU, 2015), underlines important agendas that will focus on improving collaboration among all stakeholders to reinforce the relationship capital among major stakeholders of the nation. The agendas which is targeted towards the enterprise and societal level. At the enterprise level, the focus are to upgrade the demand-driven research, improve collaboration between researchers and industries to mould research outputs that is more relevant to business context, contribute ideas, infrastructure, tools, and expertise, as well as encourage private investment in research, development, commercialization and innovation (R&D&C&I). The societal level, on the other hand, will emphasize on the involvements of the communities to provide input into social service delivery mechanisms, while a social financing model will be developed to assist communities to fund new initiatives.

These initiatives often result in very high-specific investments and are normally prone to other issues such as uncertainty on future requisite (Gaur, Mukherjee, Gaur & Schmid, 2011; Patzelt & Shepherd, 2008). Innovation, inherently, is a risky process, and collaborating with external partners whom needs and wants varies among each other throughout the innovation process will add further complications which requires a mechanism of control.

ISSUES AND CHALLENGES

Traditionally, SMEs relied on internal ability and resources to be innovative and to sustain competitive advantage. However, the average success rate of these innovative efforts tends to be much lower than desirable due to high level of risk, complexity and uncertainties (Parida et al., 2012). Scholars and policymakers have underlined the importance of collaboration between SMEs and other organizations in an open innovation model, in order to promote innovation processes (H. Chesbrough, 2010; Rahman & Ramos, 2010, 2014). In order to collaborate in open innovation environment, trust must exist among the collaborative partners (Graser & Jansson, 2005; Grudzewski, Hejduk & Sankowska, 2008). In order to trust is to have faith in the honesty, integrity, reliability, and competence of another (Ciesielska & Iskoujina, 2012; Lin, 2011; Ratnasingam, 2013). Firms face several challenges when developing relationships with potential external partners. Among others are to identify appropriate knowledge sources; explore and choose the right collaborating partners, who in return will create value for the firm (Naqshbandi & Kaur, 2011).

As open innovation entails working together with various partners and organizations in order to laverage knowledge and ideas which exist internally and externally, it is important for SMEs to developed a winning formula to manage knowledge (Nonaka,1994). Open innovation signifies the utilization of knowledge in order to create something new (Babalola & Omobowale, 2012). Within SMEs, for instance, knowledge is aptly created, shared, transferred, and applied through people rather then through information technology-based mechanism (Zhou, Tan & Uhlaner, 2007).

Although, there has been an exponentially rich study on trust across broad field and sciences, trust in the light of open innovation is still scarce. There has been a substantial body of evidence from previous research that try relating trust as an important component to open innovation (Ciesielska & Iskoujina, 2012; Dovey, 2009; Fawcett, Jones & Fawcett, 2012; Graser & Jansson, 2005; Grudzewski, Hejduk & Sankowska 2008; Lin, 2011; Olkkonen, Tikkanen & Alajoutsijärvi, 2000; Ratnasingam, 2013; Westergren & Holmström, 2012). The increasing demand for successful collaboration have placed the topic and field to be a crucial area to be frequently researched. In another manner, uncertainties are often related to the issues of risk and trust, which are explained in various perspectives (Camerer, 2003; Linell & Marková, 2013; Tileag, 2013; Twyman, Harvey & Harries, 2008; Westergren & Holmström, 2012). Therefore, it can be well observed that the readiness of partners to engage in collaborative activities will depend upon the propensity to take risk and to trust their partners.

LITERATURE REVIEW

Trust is viewed as an effective approach to solve control issues (Ma, He, Shuai & Wang, 2010), which brings along mutual benefits among the collaborative parties under the boundaries of reciprocity and conditional cooperation. Having said that, open innovation in one hand, is an activity that is highly dependent on collaborative efforts which directly, denotes that trust is a vital ingredient for success.

Trust by definition as referred to Mayer, Davis, & Schoorman (1995), is the "willingness of one party to be vulnerable to the actions of another party in favor for a certain actions". In open innovation, where activities involves building successful networks among partners, the quality of the economic relationship (Olkkonen et al., 2000), and between participating firms is an important agenda. The study by (Nooteboom, Berger & Noorderhaven, 1997), refers trust as an intangible asset, which shapes the future cooperation and makes it much easier and to benefit from the shared resources and knowledge with collaborative partners, trust must be managed efficiently (Nooteboom, 2006).

A study by Gambetta (2000), defined trust as the general conditions under which it becomes very relevant for cooperation. Focusing on trust, to some researchers is more effective than other means of collaboration as it can be considered a less costly alternative (Nooteboom et al., 1997; Zaheer, McEvily & Perrone, 1998). Blomqvist, Hurmelinna, and Seppänen (2005), in a similar reference, points to trust as 'crucial role for the composition of collaborations that are characterized by uncertainty and risk'. In order to understand trust and its relation to open innovation, the study examines trust through several dimensions explored under the open innovation and collaborative network literatures.

Characteristics

The study of trust in open innovation or collaborative networks can further be analyzed by the characteristics of trust. Lin (2011), uses the concept of knowledge-based trust in reference to perceived competence, benevolence and integrity, together with the innovation attributes in which the study proves to have significant affects to the adoption of mobile banking. Ciesielska and Iskoujina (2012), characterize trust as political trust and expert trust. Political trust is defined as the "trust towards the organization that its declarations and presentations will be followed by coherent actions" and expert trust is referred to as trust given to a person who is believed to be "professionally capable of providing quality solutions for given or taken tasks". The study, which focuses on the on-line communities of collaborators, claims that both trust are equally important for business organizations switching from the closed innovation paradigm towards open innovation.

In another perspective, Ratnasingam (2013), brought forward the importance of three types of trust namely competence, predictability and goodwill trust that she relates has significant relationship to the innovation process. Competence trust according to Ratnasingam is the trust to the other partner's capability judged from their knowledge, expertise and everything related to the expectation. This concept is also supported by Etlinger (2003), who refers to the same type of trust as emotive or capacity trust. Predictability trust, on the other hand, is related to the dependency to the other partner's constancy in the quality of performance and services provided which is integral for the expectation assurance to the future performance and act as a 'bonding' agent between respective collaborative parties in a particular project (Costa e Silva, Bradley & Sousa, 2012; Skytt & Winther, 2011). Goodwill trust which is also referred to as relationship trust explain itself by referring to the firm's effort to seek support from the other partner who are percept as being honest, caring and displays benevolence criteria. This is in line with a few other studies such as Williams (2007), who highlighted the importance of building a genuine trust through emotion management among cooperating individuals and Meng (2012), emphasizes on the lack of relationship trust among 'project partners' could deteriorate the performance and desired outcome.

Innovation Performance

Trust has long been researched in relation to innovation performance (Carter & Bélanger, 2005; De Brentani, 2001; Lai, Chen, Chiu & Pai, 2011). The study by Lai et al., for instance, look into the impact of collaborating relationship between supplier, customer and third party on product design and market performance and concludes that the involvement of each respective partners carries different weight in ensuring the innovative performance and when the dyadic trust level is high among partners, the better the innovative performance. Similarly, Wang, Yeung and Zhang (2011), in their study to measure the performance among the Chinese manufacturing firms found a positive relationship between trust and innovation performance. Another study by Hung, Lien, Yang, Wu and Kuo (2011), for instance, bring forward the issue of Total Quality Management

(TQM) and its relation to innovation performance in which the study highlighted on trust and knowledge sharing as the antecedents to organizational learning which mediates the TQM success.

When measuring open innovation performance, there has been evidence that although the measurements of the existing open innovation practices are still highly debated by the major industry players, satisfaction among large firms on the open innovation performances is positively correlated with the support by the top management (Chesbrough, 2003). This can be further supported by Gassmann et al. (2010), when they study the future of open innovation and underline nine perspectives to view pass, current and future trends in the literature. Highlighting from some past literature, the study expose the importance of building trust, generating new knowledge and dealing with low reciprocity commitment among team members to ensure successful open innovation performance.

Organizational Context

The organizational context of trust and its relation to open innovation can be explained from the organizational behavioral aspects. Bachmann and Inkpen (2011), highlighted on the ability of organization to create trust to strengthen the interorganizational relationship among the trustors and trustees which result to a lower transaction cost and lead to the creation of new ideas. Building a trustful environment (Westergren & Holmström, 2012) within the organizational context is critical for knowledge sharing culture to take place. Trustful environment includes a conducive organizational climate to embrace innovation together with the experts in knowledge and the help of resourceful use of information technology (IT).

For open innovation to take place, governance mechanism (Bughin, Chui & Johnson, 2008), is vital to facilitate the open innovation system beginning from the co creation of ideas up until the production of final output or services. Drawing the conclusion from a few major case studies of Sun Microsystem and Mozilla Foundation, the study by Bughin et al. also emphasize how clear directions, leadership and transparent process to maintain cohesive mission help to build trust and resolve conflicts among participating members of projects. While the study of trust and its relation to leadership and good governance has been exponentially researched in the organizational behavioral literature, it is still interesting to investigate how it is connected to open innovation.

Huizingh (2011), in his attempt to explore the understanding of open innovation concept, bring forward the study by Chiaroni et al. (2011), which highlighted on the state of organizational change a firm needs to adapt when moving from the closed innovation to open innovation business model. The study, according to Huizingh underlined four organizational dimensions (inter-organizational networks, organizational structures, evaluation process and knowledge management systems) as the important pillars a firm needs to put in place to smoothen the change process.

Knowledge Sharing

Trust is also considered as the facilitator to knowledge sharing (Collins & Smith, 2006; Faraj & Wasko, 2001; Ishaya & Macaulay, 1999; Jarvenpaa & Leidner, 1999). Quoting the study by Steil, Barcia and Pacheco (1999), Ciesielska and Iskoujina (2012) addrressed the importance of promoting the socialization activities among online communities to enable knowledge sharing. Trust is not a straightforward clear phenomenon. It has to be built and nurtured progressively along the innovation process. The same study by Ciesielska and Iskoujina (2012), also bring forward the highlights from Sztompka (1999), which indicates that a trust-building process in any given setting (environment), can be develop by recognizing and differentiating the various targets of trusts which are often mutually interdependent.

Knowledge has become an important resource in the post-industrial society (Bell, 1973) and so is attention towards the role of organizational knowledge and its relation to the development of knowledge workers (Savino, 2009). In a study by Gould (2012), a few issues pertaining to knowledge sharing in an open platform were highlighted where collaborative partners gain access to information and knowledge of other partners making it vulnerable to knowledge leakage. This is in line with study by Lichtenthaler and Frishammar (2011), and Mohamed et al. (2007), which support the same view by emphasizing on the decision in knowledge sharing can increase the risk in a competition and that knowledge leakage can be viewed as either positive or negative. Mohamed et al. further conclude that in the light of open innovation, the knowledge leakage can be understood as positive as it is in line with the open innovation goal and can be explained as part of the open innovation process.

Information Technology (IT)

Lack of trust leads to unexpected displacement innovation activities and breeds suspicion among participating partners, which debilitate commitment, time, cost and effort. In the situation of interdependence, trust function as a mean to reduce uncertainty (Tschannen-Moran & Hoy, 2000). In an article by Zeffane, Tipu and Ryan (2011), trust and commitment is reported to function hand-in-hand and they are forged and maintained through effective communication. Thus, building a transparent communication climate between the open innovation communities (Chesbrough & Appleyard, 2007) a managerial imperative. For years, IT has assist in automating and improvizing communication between individual, teams and organization. For organizations to perform at its best in open innovation, effective IT platforms must be put in place to support human interactions and human decision-making.

Similarly,the study by Wikhamn and Wikhamn (2013), has also highlight on the importance of IT as one of the main driver to boost open innovation. Highlighting on two major perspective of the firm and the ecosystem, the study conclude that the importance of IT can be explained from two major areas which are the organizing mechanism and the value generation mechanism. Firm percepts organizing mechanism as the internal dynamic strength and its relation to the environment while the ecosystem sees it as a collective and cross boundary aspects of innovative work. Conversely, in the value generation mechanism, firms percept technology exploration and exploitation strategy for open innovation strategy while the ecosystem-perspective look at collective effort in creating value among the collaborative partners.

The relations between trust and IT have long been explored in various literatures and the advent of the Internet technology has add various gaps that has been researched and continually be studied. McKnight (2005), addresses three types of trust which is similar to the trust of counterparts (collaborative partners) and is applicable to develop trust in IT namely 1) trusting belief; 2) trusting intentions; and 3) trusting behavior.

Using a case study of a collaboration project between Nokia and GNOME, Ciesielska and Iskoujina (2012), highlighted on two types of trust namely the political trust and the professional trust, which according to them is crucial to ensure success in online communities working together in an open sources platform.

When companies engaged with external partners for various innovation reasons, partners with innovation issues try to find formulas from the other partners who is seen and percept as being capable to assist in the problem solving. Studies by (Graser & Jansson, 2005) and Grudzewski et al. (2008), place trust as an important aspect that needs to be measured to rationalize the collaborative performance. Krishnan, Martin, and Noorderhaven (2006), in their study proves that trust has an important relationship to performance and that uncertainty moderates the performance results. (Dovey, 2009), denotes the relationship between experiences and trust and conclude that failure to learn from experience destroys trust.

The study of trust in open innovation, alliance strategies and collaborative networks can further be analyzed by the characteristics of trust. Lin (2011), for instance, uses the concept of knowledge-based trust in reference to perceived competence, benevolence and integrity, together with the innovation attributes in which the study proves to have significant affects to the adoption of mobile banking. Further, (Ciesielska & Iskoujina, 2012), characterizes trust as political trust and expert trust. Political trust is defined as the "trust towards the organization that its declarations and presentations will be followed by coherent actions" and expert trust is referred to as trust given to a person who is believed to be "professionally capable of providing quality solutions for given or taken tasks". The study, which focuses on the on-line communities of collaborators, claims that both trust are equally important for business organizations switching from the closed innovation paradigm towards open innovation.

In another perspective, Ratnasingam (2013), highlighted on the importance of three types of trust namely competence, predictability and goodwill trust in which the researcher relates trust as having a significant relationship throughout the innovation process.

Bachmann and Inkpen (2011) highlighted on the ability of organization to create trust to strengthen the interorganizational relationship among the trustors and trustees which result to a lower transaction cost and lead to the creation of new ideas. Building a trustful environment (Westergren & Holmström, 2012) within the organizational context is critical for knowledge sharing culture to take place. Trustful environment includes a conducive organizational climate to embrace innovation together with the experts in knowledge and the help of resourceful use of information technology (IT).

CONCLUSION

As Malaysia envisions to achieve a high-income and advanced nation by 2020, it is important to support the government strategies and programmes which have been developed and highlighted in the Eleventh Malaysian Plan (EPU, 2015), set to unlock the productivity of the country, while at the same time transform the innovation into wealth creation.

The study in this nature may serve as a platform that will contribute towards providing significant outputs in helping to understand the drives of Malaysian SMEs to adopt open innovation and understand the challenges face by the organization in implementing open innovation in Malaysia. The government of Malaysia will benefit from an understanding about the open innovation system, which is a network of collaborative ecosystem by nature. This study also offers a new contract for trust factors as explained by literatures.

This paper examines the issue of trust and its relation to the study of open innovation and collaborative networks by reviewing the literature studies pertaining to areas and determining the common dimensions existed between them. These dimensions which among others points at trust characteristics, innovation performance, organizational context, knowledge sharing and IT. These dimensions serves in building interest to study trust as an important component that relates to open innovation.

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